K.L.N. College of Engineering

i'Storm

Department of Information Technology

PRINCIPAL MESSAGE

It is a matter of great pride and satisfaction for KLN COLLEGE OF ENGINEERING to bring out the News Letter 'ISTORM' Released from the Department of Information Technology. The College has made tremendous progress in all areas- academic, non-academics, capacity building relevant to staff and students. The College has achieved another milestone in getting NBA (National Board of Accreditation).I am confident that this issue of Department News Letter will send a positive signal to the staff, students and the person who are interested in the Technical education and Technology based activities. A News Letter is like a mirror which reflects the clear picture of all sorts of activities undertaken by a Department and develops writing skills among students in particular and teaching faculty in general. I congratulate the Editorial Board of this News Letter who have played wonderful role in accomplishing the task in Record time. I express my deep sense of gratitude to Dr.N.Balaji, HOD/IT under whose guidance this Technical work has been undertaken and completed within the stipulated time. Also my heartfelt Congratulations to staff members and Students for their fruitful effort. With Best Wishes.

PRINCIPAL

Dr.A.V. RAMPRASAD

THE EDITOR'S DESK

It gives me immense pleasure to note that response to this newsletter of our department **i'STORM** has been overwhelming. The wide-spectrum of articles in different sections gives me a sense of pride that our students and professors possess creative potential and original thinking in ample measures. Each article is entertaining, interesting and absorbing. I applaud the contributors for their stimulated thoughts and varied hues in articles contributed by them. Commendable job has also been done by the Editorial Board in planning for and producing the Newsletter. My congratulations to the team who took the responsibility for the arduous task most effectively. I am hopeful that this small piece of technical work shall not only develop the taste for reading among students but also develop a sense belonging to the institution as well.

H.O.D (I.T)
Dr.N.Balaji

NEWS LETTER EDITORIAL BOARD

EDITOR-IN-CHIEF:
- Dr.N.Balaji (HOD/IT)

STAFF-INCHARGE:
- Mrs.N.Nandhini (AP2)

STUDENT EDITORS

S.Vishnu Prasad (Third year)

M.Sundar (Third Year)

ICON OF THE MONTH

MARK ELLIOT ZUCKERBERG

Mark Elliot Zuckerberg (born May 14, 1984) is an American computer programmer and Internet entrepreneur. He is best known as one of five co-founders of the social networking website Facebook. As of April 2013, Zuckerberg is the chairman and chief executive of Facebook, Inc.and his personal wealth, as of July 2014, is estimated to be $33.1 billion. Mark Zuckerberg receives a one-dollar salary as CEO of Facebook.

Together with his college roommates and fellow Harvard University students Eduardo Saverin, Andrew McCollum, Dustin Moskovitz, and Chris Hughes, Zuckerberg launched Facebook from Harvard's dormitory rooms. The group then introduced Facebook onto other campuses nationwide and moved to Palo Alto, California shortly afterwards. In 2007, at the age of 23, Zuckerberg became a billionaire as a result of Facebook's success. The number of Facebook users worldwide reached a total of one billion in 2012. Zuckerberg was involved in various legal disputes that were initiated by others in the group, who claimed a share of the company based upon their involvement during the development phase of Facebook.

Since 2010, Time magazine has named Zuckerberg among the 100 wealthiest and most influential people in the world as a part of its Person of the Year distinction. In 2011, Zuckerberg ranked first on the list of the "Most Influential Jews in the World" by The Jerusalem Post and has since topped the list every year as of 2013. Zuckerberg was played by actor Jesse Eisenberg in the 2010 film The Social Network, in which the rise of Facebook is portrayed.

Early life:

Zuckerbergwas born in 1984 in White Plains, New York. He is the son of dentist Edward Zuckerberg and psychiatrist Karen Kempner.He and his three sisters, Randi, Donna, and Arielle were brought up in Dobbs Ferry, New York, a small town about 10 miles north of New York City.

At Ardsley High School, Zuckerberg excelled in classics. He transferred to Phillips Exeter Academyin his junior year, where he won prizes in science (math, astronomy and physics) and classical studies. On his college application, Zuckerberg claimed that he could read and write French, Hebrew, Latin, and ancient Greek. He was captain of the fencing team. In college, he

as known for reciting lines from epic poems such as The Iliad.

Software developer:

At early years Zuckerberg began using computers and writing software in middle school. His father taught him AtariBASIC Programming in the 1990s, and later hired software developer David Newman to tutor him privately. Newman calls him a "prodigy", adding that it was "tough to stay ahead of him". Zuckerberg took a graduate course in the subject at Mercy College near his home while still in high school. He enjoyed developing computer programs, especially communication tools and games. In one such program, since his father's dental practice was operated from their home, he built a software program he called "ZuckNet" that allowed all the computers between the house and dental office to communicate with each other. It is considered a "primitive" version of AOL's Instant Messenger, which came out the following year.

During Zuckerberg's high school years, under the company name Intelligent Media Group, he built a music player called the Synapse Media Player that used machine learning to learn the user's listening habits, which was posted to Slashdotand received a rating of 3 out of 5 from PC Magazine.

How zuckerberg found facebook?

By the time Zuckerberg began classes at Harvard, he had already achieved a "reputation as a programming prodigy", notes Vargas. He studied psychology and computer science as well as belonging to Alpha Epsilon Pi, a Jewish fraternity, and Kirkland House.In his sophomore year, he wrote a program he called CourseMatch, which allowed users to make class selection decisions based on the choices of other students and also to help them form study groups. A short time later, he created a different program he initially called Facemash that let students select the best looking person from a choice of photos. According to Zuckerberg's roommate at the time, Arie Hasit, "he built the site for fun". Hasit explains:

We had books called Face Books, which included the names and pictures of everyone who lived in the student dorms. At first, he built a site and placed two pictures, or pictures of two males and two females. Visitors to the site had to choose who was "hotter" and according to the votes there would be a ranking.

The site went up over a weekend; but by one fine morning, the college shut it down because its popularity had overwhelmed one of Harvard's network switches and prevented students from accessing the Internet. In addition, many students complained that their photos were being used without permission. Zuckerberg apologized publicly, and the student paper ran articles stating that his site was "completely improper."

The following semester, in January 2004, Zuckerberg began writing code for a new website. On February 4, 2004, Zuckerberg launched "Thefacebook", originally located at thefacebook.com.

M.SUNDAR

III year-B

EMERGING TECHNOLOGIES

Google Glass

Also known as	Project Glass
Developer	Google
Manufacturer	Foxconn
Type	Augmented reality (AR), Optical head-mounted display (OHMD),Wearable technology, Wearable computer
Release date	**Developers (US):** February 2013
Introductory price	Explorer version: $1,500 USD Consumer edition: "close to the average Smartphone"
Operating system	Android (4.4.2)
Power	Lithium polymer battery (2.1 Wh)
CPU	OMAP 4430 SoC, dual-core
Memory	1GB RAM (682MB available to developers)
Storage	16 GB Flash total (12 GB of usable memory)
Display	Prism projector, 640×360 pixels (equivalent of a 25 in/64 cm screen from 8 ft/2.4 m away)
Sound	Bone conduction transducer
Input	Voice command through microphone, accelerometer, gyroscope, magnetometer, ambient light sensor, proximity sensor
Controller input	Touchpad, MyGlass phone app
Camera	Photos – 5 MP, videos – 720p
Connectivity	Wi-Fi 802.11b/g, Bluetooth, micro USB
Dimensions	22x21"
Weight	50g
Backward compatibility	Any Bluetooth-capable phone; My Glass companion app requires Android 4.0.3 (Ice Cream Sandwich) or higher or any iOS 7.0 or higher
Website	google.com/glass

Features:

Touchpad: A touchpad is located on the side of Google Glass, allowing users to control the device by swiping through a timeline-like interface displayed on the screen. Sliding backward shows current events, such as weather, and sliding forward shows past events, such as phone calls, photos, circle updates, etc.

Camera: Google Glass has the ability to take photos and record 720p HD video.

Display: The Explorer version of Google Glass uses a Liquid Crystal on Silicon (LCoS), field-sequential color, LED illuminated display. The display's LED illumination is first P-polarized and then shines through the in-coupling polarizing beam splitter (PBS) to the LCoS panel. The panel reflects

the light and alters it to S-polarization at active pixel sites. The in-coupling PBS then reflects the S-polarized areas of light at 45° through the out-coupling beam splitter to a collimating reflector at the other end. Finally, the out-coupling beam splitter (which is a partially reflecting mirror, not a polarizing beam splitter) reflects the collimated light another 45° and into the wearer's eye.

Voice activation: Other than the touchpad, Google Glass can be controlled using "voice actions". To activate Glass, wearers tilt their heads 30° upward (which can be altered for preference) or tap the touchpad, and say "**O.K., Glass**." Once Glass is activated, wearers can say an action, such as "**Take a picture**", "**Record a video**", "**Hangout with [person/Google+ circle]**", "**Google 'What year was Wikipedia founded**?'", "**Give me directions to the Eiffel Tower**", and "**Send a message to John**". For search results that are read back to the user, the voice response is relayed using bone conduction through a transducer that sits beside the ear, thereby rendering the sound almost inaudible to other people.

Privacy concerns:

- Concerns have been raised by various sources regarding the intrusion of privacy, and the etiquette and ethics of using the device in public and recording people without their permission.
- Privacy advocates are concerned that people wearing such eyewear may be able to identify strangers in public using facial recognition, or surreptitiously record and broadcast private conversations.
- There have also been concerns over potential eye pain caused by users new to Glass.
- Concerns have been raised by cyber forensics experts at the University of Massachusetts who have developed a way to steal smartphone and tablet passwords using Google Glass. The specialists developed a software program that uses google glass to track finger shadows as someone types in their password. Their program then converts the touchpoints into the keys they were touching, allowing them to catch the passcodes.

S.VISHNU PRASAD,

III year-B.

GOOGLE FUSION TABLES

Google Labs announced Google Fusion tables, a new system for managing data in the Google cloud. First, what is Fusion Tables? It is a system for managing data in the cloud for collaboration with data from disparate sources in a simple way, including the ability to "drill-down" to the sources of the data. It allows the user to "join" (in a loose definition) data without the constraints of the data model, normally found in a relational DBMS. What it is not is a DBMS to manage data for an On-Line

Transaction Processing (OLTP) system or a Data Warehouse. Fusion Tables is based on data spaces, defined in Wikipedia as "a container for domain specific data" and further "A Data Space system is a multi-model data management system that manages data sourced from a variety of local or external sources". Data Spaces were originally defined in the early 1990's during the Object Oriented DBMS (OODBMS) era.

Google Fusion Tables is a web application used for sharing, visualizing, and publishing tabular data. You can upload your own CSV, KML, ODS, XLS, or Google Spreadsheet data to a Fusion Tables table. Once your data is in Fusion Tables, you can collaborate on it with others in real time, publish it for Google Search, create map and chart visualizations for private use or for embedding on websites, filter it according to specific criteria, and update the data behind your visualizations or filters at any time.

The Fusion Tables API allows you to use HTTP requests to programmatically to perform these tasks, which are also available in the Fusion Tables web application:

- create and delete tables
- read and modify table metadata such as table and column names and column types
- insert, update, and delete the rows in a table
- create, update, and delete settings for certain visualizations
- query the rows in a table

For example, you can use the Fusion Tables API to apply the same map style and info window appearance to several tables, update the table's data

and therefore update embedded visualizations, add and populate a new column for a table, read a public table's metadata, or query a table's contents.

Table structure, metadata, and visualization settings are represented as JSON data structures accessible through RESTful HTTP requests. Row data is handled using a subset of SQL statements sent as HTTP requests, and can be retrieved in either CSV or JSON formats.

URL:https://developers.google.com/fusiontables

G.M.SRI VIDHYA

III year-B.

5G WIRELESS TECHNOLOGY

What is 5g?

5G is the short for fifth generation, a mobile broadband technology that is in the early stages of works and likely to be in place six to seven years from now. A 5G network will be able to handle 10,000 times more call and data traffic than the current 3G or 4G network.

What would a typical 5g experience be like?

You could download a three-hour high-definition movie on a mobile device in one second. It takes several minutes on a 3G or 4G network and several hours on 2G.

Live gaming and real-time video streaming will be possible without any lags as data transmission happens literally in the blink of an eye. Those annoying video buffering during streaming sessions would disappear.

Will 5g work on the same spectrum bands that 3g and 4g run on?

Researchers have yet to finalise the spectrum band for 5G. But indications are that 5G networks

will run on ultra-high spectrum bands like 15 GHz, 27 GHz or even 70 GHz.

These bands offer far broader bandwidth than the lower 700 MHz, 800 MHz or 1800 MHz frequencies used for 4G, and hence can carry a lot more data at super speeds.

Spectrum, in this case, may be likened to a highway of airwaves on while telecom signals travel. Broader the highway, higher the amount and speed of data that can travel on it. The result: a richer mobile Internet experience.

What is the current status of 5g?

The European Telecommunications Standards Institute is formulating 5G global technology standards, which are likely to be formalized by 2019.

Telecom companies such as Nokia, Ericsson, Alcatel-Lucent , NTT DoCoMo, NEC, Samsung, Huawei and Fujitsu are driving bulk of the 5G-related innovations.

When will people be able to experience 5g?

5G networks are likely to be rolled out commercially between 2020 and 2025. If the global standards are finalized by 2019, the earliest commercial deployments could happen by 2020.

Japan's NTT DoCoMo is targeting a 5G commercial launch by 2020 and will start indoor trials at its R&D centre in Yokosuka this year. French-American telecom equipment maker Alcatel-Lucent is looking at a commercial rollout by 2025.

Will 3g and 4g handsets run on 5g networks?

No. 5G will require new chipsets and devices capable of supporting speeds upwards of 10 gigabits per second. 4G and 3G run at a fraction of that speed.

Manufacturing of 5G-ready gear is expected to start only after the standards are finalized. Researchers foresee the emergence of integrated, futuristic devices that will combine the functions of a TV, tablet, Smartphone, computer and a game console. This is since 5G will be a combination of different technologies and will also embrace learnings from 3G and 4G.

Are there any inherent weaknesses in 5g?

Since 5G services are likely to run on ultra-high spectrum bands, which travel shorter distances compared with lower bands, they may be more suited to enhanced indoor coverage.

Higher frequencies could be blocked by buildings and they lose intensity over longer distances. That means, offering wider coverage would be a challenge.

R.ARTHY,

III yr-A

LI-FI (light fidelity)

A Mexican software company has managed to transmit audio, video and internet across the spectrum of light emitted by LED lamps — at a data transfer rate of 10 gigabytes per second.

The technology can illuminate a large work space, such as an office, while providing full mobile internet to every device that comes into the range of the light spectrum.

The technology, called Li-Fi or light fidelity, is presented as an alternative to Wi-Fi because it will maximize the original provided speed of the internet to offer safer data transfer and a transfer rate of up to 10 gigabytes per second.

The Li-Fi device circulates data via LEDs that emit an intermittent flicker at a speed imperceptible to the human eye.

"As Wi-Fi uses cables to spread our connections, wireless transmission Li-Fi uses LED lamps that emit high brightness light," said Arturo Campos Fentanes, CEO of Sisoft in Mexico.

Another advantage in comparison to Wi-Fi is that there is no way to hack the signal since the internet is transmitted by light, there is no way to "steal it."

Furthermore, it can be installed in hospitals areas that use radiation apparatus and generally block or distort internet signal, Fentanes said. With this new technology expansion through the market is sought, with lower costs and a service increased by five thousand per cent internet speed.

Currently in Mexico the highest transfer rate is 200 megabytes per second. Just to get an idea, with Li-Fi you could quickly download an entire HD movie in just 45 seconds.

Also known as visible light communications (VLC), this technology began with an internet speed of two Gigabits per second, but Sisoft along with researchers from the Autonomous Technological Institute of Mexico (ITAM) adapted the system to be multiplied five times.

Fentanes explained that the first experiments were conducted with audio, in which a cable is connected via 3.5 mm audio Jack from a smartphone to a protoboard table to transform the auditory signal in optical waves.

That way a special emitter transmits data across the spectrum of light generated by an LED lamp and is captured by a receptor located in a speaker that reproduces sound.

For wireless internet transmission, the mechanics is similar. The station developed by Sisoft stands above the router device that distributes the internet signal and a lamp-LED is incorporated to maximise the speed of data transfer.

Light will emulate an antenna, but only the electronic apparatus that has the receptor for the "optical audio" signal and is inside the range of the halo of light will have a connection.

R.AARTHY,

III yr-A

WebGL (Web Graphics Library)

WebGL (Web Graphics Library) is a JavaScript API for rendering interactive 3D graphics and 2D graphics within any compatible web browser without the use of plug-ins. WebGL is integrated completely into all the web standards of the browser allowing GPU accelerated usage of physics and image processing and effects as part of the web page canvas. WebGL elements can be mixed with other HTML elements and composited with other parts of the page or page background. WebGL programs consist of control code written in JavaScript and shader code that is executed on a computer's Graphics Processing Unit (GPU). WebGL is designed and maintained by the non-profit Khronos Group.

WebGL is a cross-platform, royalty-free web standard for a low-level 3D graphics API based on OpenGL ES 2.0, exposed through the HTML5 Canvas element as Document Object Model interfaces. Developers familiar with OpenGL ES 2.0 will recognize WebGL as a Shader-based API using GLSL, with constructs that are semantically similar to those of the underlying OpenGL ES 2.0 API. It stays very close to the OpenGL ES 2.0 specification, with some concessions made for what developers expect out of memory-managed languages such as JavaScript.

WebGL brings plugin-free 3D to the web, implemented right into the browser. Major browser vendors Apple (Safari), Google (Chrome), Mozilla (Firefox), and Opera (Opera) are members of the WebGL Working Group.

Design:

WebGL is based on OpenGL ES 2.0 and provides an API for 3D graphics.[5] It uses the HTML5 canvas element and is accessed usingDocument Object Model interfaces. Automatic memory management is provided as part of the JavaScript language.

Like OpenGL ES 2.0, WebGL does not have the fixed-function APIs introduced in OpenGL 1.0 and deprecated in OpenGL 3.0. This functionality can instead be provided by the user in the JavaScript code space.

1**playing games using WebGL**

Content creation and ecosystem:

The WebGL API may be too tedious to use directly without some utility libraries, which for example set up typical view transformation shaders (e.g. for view frustum). Loading scene graphs and 3D objects in the popular industry formats is also not directly provided for. JavaScript libraries have been built (or sometimes ported to WebGL) to provide the additional functionality. A non-exhaustive list of libraries that provide many high-level features includes three.js, O3D, OSG.JS, and GLGE. There also has been a rapid emergence of game engines for WebGL, including Unreal

Engine 4 and Unity 5. The Stage 3D/Flash-based Away3D high-level library also has a port to WebGL via TypeScript. A more light-weight utility library that provides just the vector and matrix math utilities for shaders is sylvester.js. It is sometimes used in conjunction with a WebGL specific extension called **glUtils.js**.

There are also some 2D libraries built on top of WebGL like Cocos2d-x or Pixi.js, which were implemented this way for performance reasons, in a move that parallels what happened with the Starling Framework over Stage3D in the Flash world. The WebGL-based 2D libraries fall back to HTML5 canvas when WebGL is not available.

Removing the rendering bottleneck by giving almost direct access to the GPU alas exposed performance limitations in the JavaScript implementations. Some were addressed by asm.js. (Similarly, the introduction of Stage3D exposed performance problems within ActionScript, which were addressed by projects like CrossBridge.)

Creating content for WebGL scenes often means using a regular 3D content creation tool and exporting the scene to a format that is readable by the viewer or helper library. Desktop 3D authoring software such as Blender or Autodesk Maya can be used for this purpose, but there are also some WebGL-specific software such as CopperCube or an online WebGL-based editors such as Clara.io. Online platforms such as Sketchfab allow users to directly upload their 3D models and display them using a hosted WebGL viewer.

Additionally, Mozilla Firefox implemented built-in WebGL tools starting with version 27 that allow editing vertex and fragment shaders. A number of other debugging and profiling tools have also emerged.

X3D also made a project called X3DOM to make X3D and VRML content running on WebGL. The 3D model will in XML tag <X3D> in HTML5 and interactive script will use JavaScript and DOM. BS Content Studio and Instant Reality X3D exporter can exported X3D in HTML and running by WebGL.

S.VISHNU PRASAD,

III year-B.

GREEN COMPUTING

WHAT IS GREEN COMPUTING ?

The study and practice of designing, manufacturing, using, and disposing of computers, servers, and associated sub systems such as monitors, printers, storage devices, and net-working and communications systems efficiently and effectively with minimal or no impact on the environment.

WHY GREEN COMPUTING ?

A server spend around 120W, so each rack of servers spend around 10kW(each rack contains up to 80 servers). If we include the infrastructure (cooling system, UPS...) it reach around 10MW. This amount of energy cost per month around 1500$, only one server. If we focus on the datacenter, it is stimated that in 2006 all the 6000 Datacenters in USA spend 61 billion kW/h (1,5% of total U.S electricity consumption that year) which cost around $4.5 Billion in electricity cost. This was costs-equivalent to 5.8 million average U.S. house-holds. Actually is not only money, we can see in this infographic the cost of one or all monthly Google

searches in terms of kW/h and CO2carbon footprint. The total carbon footprint of ICT is 2% of total in the world, the same than avitation.

HOW GREEN COMPUTING IS?

We will explain firstly the problems that we had or we have currently, then we will explain the solutions reached and we will finish with the "Green Computing technologies"used.

What Data says?

50% of electricity consumption belong to site infrastructure. Then the volume servers are around 30% and the remainder is shared between network equipment, storage,high-end servers and mid-range servers. Another problem is that in some USA regions such as Manhattan are physical limitations on power availability to make another datacenter. Big companies want to have their datacenters in the best possible location to have a better QoS(Quality of Service). To solve these problems,companies such as Google built datacenters outside USA ,for example in Finland or Belgium. Google's Hamina Data-center is well know in Green Computing world because its special energy sources and cooling system. This datacenter take some of the energy with wind turbines. The datacenter take water from the Gulf of Finland, then with sea water pumps it pupms water in cooling modules which chill inside the datacenter (datacenter workload). This kind of technologies are constantly developed to get a better performance of the datacenter.

IN A COMPUTER SYSTEM

We saw above the energy cost of infrastructure, but also the computer system spend huge amounts of energy. Traditional designs focus primarily on system performance but did not think in the power consumption. We think that there are two kind of solution to these

CHANGING THE COMPUTER SYSTEM

When we talk about "changing the computer system" we mean another ways to process a task. There are two main "Green Computing ways": Cloud Computing and Grid Computing.

• **Cloud Computing**: Thanks to the Internet ,we can spend someone else's power doing the computation in "the Cloud"and giving the result in mobile devices,which consume less power.The most recent study in this field set that Cloud Computing can save up to 87% of ITenergy.

• **Grid Computing**: We can save energy distributing effectively compute intensive parallel applications on grid .

CONTROLLING THE COMPUTER SYSTEM

Another solution is to take a better control of the system. The main goal is to consume the minimum amount of energy required to perform any task [6]. There are plenty ways to do it, the following is a list with some solutions:

• Virtualization: Using virtualized enviroments we can save energy because these sources are better used. We can virtualize in many layer, and solutions such as LiteGreen helps to save around 70% of energy compared to manual power management.

• Power Management: Doing this with technologies such as ACPI we can do a optimal energy use. We have to take in account that the system must be prepared for the changing demand. Another energy-aware solution is power off or sleep

idle servers. To have enough technology to do and control these garantee do not waste energy.

For now the most important thing is to address all these problems in order to involve information systems to an Information Strategy for Environmental Sustainability. In order to achieve this goal the ACM (Association for computing machinery) members, both collectively and individually, must apply their computing knowledge to contribute to the creation and implementation of an information strategy for a sustainable society.

S.S.AARTHY,

III year-A

Some Unknown Facts..!

- The first Computer Mouse was invented by Doug Engelbart in around 1964 and was made of wood.

- On an average workday, a typist's fingers travel 12.6 miles.

- Alaska is the only state that can be typed on one row of keys on a "QUERTY" keyboard.

- The Domain Name www.youtube.com was registered on February 14,2005.

- Facebook pays atleast $500 if you can find a way to hack the site.

- There are approximately 1.06 billion instant messaging accounts worldwide.

- It would take 1,000,000 human brains to store all of the information that can be found on the internet.

- IBM currently has the biggest data drive. At 120 petabytes, it can store 24 billion songs or back up the entire web 60 times.

- The processor in the first Apple computer (the Apple I) is 1,000 times slower than today's Apple iPad.

- Google uses over 1 million computers for is operation and handles over 1 billion search requests—per day.

- 25% of Americans use only a mobile device to use the Internet.

- During 1980s, an IBM computer was not considered to be 100% compatible if it could not run Microsoft Flight Simulator.

- Mosaic was the first popular web browser which was released in 1993.

- The average computer user blinks 7 times a minute, less than half the normal rate of 20.

- The first hard drive was made by IBM in 1956 and was called IBM Model 350 Disk File.

- The First ever smartphone to run Android was HTC G1 (also called HTC Dream). It was running the Android 1.6 (Donut) version.

- Hongkong is the world's fastest internet place. It has blazing fast internet,an average peak speed of 54.1 MB/seconds At this speed we can download HD movie in about 4 minutes.

K.R.VANDANASRI,

II year-B.

RECENT TRENDS

## APACHE HADOOP

What is Hadoop ?

Apache Hadoop is an open source framework for developing distributed applications that can process very large amounts of data.

It is a platform that provides both distributed storage and computational capabilities.

Hadoop has two main layers:

Computation layer: The computation tier uses a framework called MapReduce.

Distributed storage layer: A distributed filesystem called HDFS provides storage.
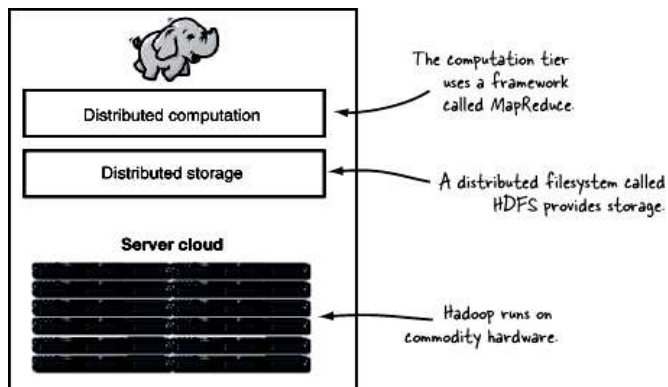
WHY HADOOP ?

Building bigger and bigger servers is no longer necessarily the best solution to large-scale problems. Nowadays the popular approach is to tie together many low-end machines together as a single functional distributed system. For example,

A high-end machine with four I/O channels each having a throughput of 100 MB/sec will require three hours to read a 4 TB data set! With Hadoop, this same data set will be divided into smaller (typically 64 MB) blocks that are spread among many machines in the cluster via the Hadoop Distributed File System (HDFS).

With a modest degree of replication, the cluster machines can read the data set in parallel and provide a much higher throughput. Moreover its cheaper than one high-end server!

For computationally intensive work,

Most of the distributed systems (eg. SETI@home) are having approach of moving the data to the place where computation will take place And after the computation, the resulting data is moved back for storage. This approach works fine for computationally intensive work.

For data-intensive work,

- ✓ We need other better approach, Hadoop has better philosophy toward that Because Hadoop focuses on moving code/algorithm to data instead data to the code/algorithm.

- ✓ The move-code-to-data philosophy applies within the Hadoop cluster itself, And data is broken up and distributed across the cluster, And computation on a piece of data takes place on the same machine where that piece of data resides.

- ✓ Hadoop philosophy of move-code-to-data makes more sense As we know the code/algorithm are always smaller than the Data hence code/algorithm is easier to move around.

HADOOP ADVANTAGES:

- ✓ Hadoop is an open source, versatile tool that provides the power of distributed computing.
- ✓ By using distributed storage & transferring code instead of data, Hadoop avoids the costly transmission step when working with large data sets.
- ✓ Redundancy of data allows Hadoop to recover from single node fail.
- ✓ Ease to create programs with Hadoop As it uses the MapReduce framework.
- ✓ You didnot have to do worry about partitioning the data, determining which nodes will perform which tasks, or handling communication between nodes as It is all done by Hadoop for you.
- ✓ Hadoop leaving you free to focus on what is most important to you and your data and what you want to do with it.

HADOOP KEY FEATURES:

Distributed computing is the very vast field but following key features has made Hadoop very distinctive and attractive.

Accessible: Hadoop runs on large clusters of commodity machines or on cloud computing services such as Amazon's Elastic Compute Cloud (EC2).

Robust: As Hadoop is intended to run on commodity hardware, It is architected with the assumption of frequent hardware malfunctions. It can gracefully handle most suchfailures.

Scalable: Hadoop scales linearly to handle larger data by adding more nodes to the cluster.

Simple: Hadoop allows users to quickly write efficient parallel code. Hadoop's accessibility and simplicity give it an edge over writing and running large distributed programs.

<div align="right">

S.S.AARTHY,

III year-A

</div>

NETWORK SECURITY

Spyware is a software that aids in gathering information about a person or organization without their knowledge and that may send such information to another entity without the consumer's consent, or that asserts control over a computer without the consumer's knowledge.

You can legally purchase it and install it on your computer, but it's against the law to do so on someone else's device. Spyware records e-mails, chats, browser history, passwords, usernames, etc.

You'd buy it for you if you wanted to know what your tween was up to on it or how much your employees are goofing off.

This same kind of software can infect your computer after you click on a link in a strange e-mail or visit a malicious website that downloads a virus. Spyware can also in the form of a flash drive-like

tool that a snoop or crook could connect to someone's PC and obtain private information.

Not surprisingly, this technology has made it possible to infect PCs at hotels. In Dallas recently, computers were infected at several major hotels. The crooks used hotel computers to access Gmail accounts, then Downloaded and installed the flash drive-like tool to track keystrokes of unsuspecting

innocent guest users as they typed in passwords and usernames to access their bank and other online services.

This is why you should use a public computer only for website browsing for the Latest news or entertainment. Even if the PC is within visual range of hotel staff, a crook could still easily connect a key logger. This is just too easy to do once the criminal sits down at a computer.

If you absolutely must print something out from your e-mail account, at least use a throw away e-mail address like 10minutemail.com or yopmail.com. Use your Smartphone to forward e-mails to the throwaway address. Next, access the temporary address from the hotel PC.

Lock down BIOS settings, then secure them with a solid password. This way, people can't boot up a computer with a flash drive or CD. But not all operating system support these protective measures. Your best bet, again, is to use hotel PCs only for entertainment or checking on the weather.

R.PRIYADARSHINI

III year-B

PLACEMENT TIPS

Interview questions-I

Predict the output or error(s) for the following:

```
1.  struct aaa{
struct aaa *prev;
int i;
struct aaa *next;
};
main(){
 struct aaa abc,def,ghi,jkl;
 int x=100;
 abc.i=0;abc.prev=&jkl;
 abc.next=&def;
 def.i=1;def.prev=&abc;def.next=&ghi;
 ghi.i=2;ghi.prev=&def;
 ghi.next=&jkl;
 jkl.i=3;jkl.prev=&ghi;jkl.next=&abc;
 x=abc.next->next->prev->next->i;
 printf("%d",x);
}
```

Answer:

2

Explanation:

above all statements form a double circular linked list;

abc.next->next->prev->next->i

this one points to "ghi" node the value of at particular node is 2.

2. struct point
{

```
 int x;
 int y;
 };
struct point origin,*pp;
main(){
pp=&origin;
printf("origin is(%d%d)\n",(*pp).x,(*pp).y);
printf("origin is (%d%d)\n",pp->x,pp->y);
}
```

 Answer:
origin is(0,0)
origin is(0,0)
Explanation:
pp is a pointer to structure. we can access the elements of the structure either with arrow mark or with indirection operator.
Note:
Since structure point is globally declared x & y are initialized as zeroes

3.main()
```
{
 int i=_l_abc(10);
printf("%d\n",--i);
}
int _l_abc(int i)
{
 return(i++);
}
```
Answer:
9
Explanation:
return(i++) it will first return i and then increments. i.e. 10 will be returned.

4.   main()
```
{
 char *p;
 int *q;
 long *r;
 p=q=r=0;
 p++;
 q++;
 r++;
 printf("%p...%p...%p",p,q,r);
}
```
Answer:

0001...0002...0004
Explanation:
++ operator when applied to pointers increments address according to their corresponding data-types.

5.   main()
```
{
 char c=' ',x,convert(z);
 getc(c);
 if((c>='a') && (c<='z'))
 x=convert(c);
 printf("%c",x);
}
convert(z)
{
  return z-32;
}
```

Answer:
Compiler error
Explanation:
declaration of convert and format of getc() are wrong.

M.Karpaga Lakshmi

II year-A

Interview questions-II

1. **Can the *sizeof* operator be used to tell the size of an array passed to a function?**
Answer:NO.
2. **How do you swap two variables without using temporary variables?**
For example: we can swap by this method
(For e.g.: consider a=5,b=3)
a=a+b;b=a-b;a=a-b.
3. **Define the Big-Endian and Little-Endian assignment.**
       Big-Endian is used when lower byte addresses are used for the MSB of the word.

Little-Endian is used for the opposite ordering where lower byte addresses are used for LSB of the word.

4. **Can comments be nested in C?**

Answer: NO.

5. **What is memory leak?**It's an scenario where the program has lost a reference to an area in the memory. It's a programming term describing the loss of memory.

This happens when the program allocates some memory but fails to return it to the system.

B.NIRANJANA,

II year- B

BULLETINS

FINAL YEAR (2011-2015) STUDENTS SELECTED BY TATA CONSULTANCY SERVICES

	L MYMOON FARISHA	115002
	R JAYA PRIYA	115028
	S YOGESWARI	115005
	M D RUBINI	115001

	K T VAISHNAVI	115114
	N JAHITHA BEGUM	115027
	S DIVYA	115026

Clusiter'14

Our department has successfully conducted the National Level Technical symposium "*CLUSITER'14*" on 11/09/2014.Vrious college actively participated on the day.This symposium was conducted to enhance the technical and non-technical skills of students.

Momento presentation on clusiter'14

Valedictory function of TFSD-5

Our Information Technology department has been successfully conducted its "*Technologies for Software Development*" (TFSD) course and the project contest for the fifth time.

Totally 48 second year students of our IT Dept. attended the program, which was handled by the department Pre-Final year and Final year students a team of 10 members under the coordination of Mr.S.Ilankumaran, Associate Professor of IT department and Mr.L.R.J.Karthik, Assistant Professor of IT department.

WORKSHOP ON NETWORKING

Ellysium has conducted a one day workshop on NETWORKING in 3rd Septembe2014. This program was conducted for the all the third year student of our IT department. This workshop was so informative and helps to understand the basic concept of networks.

WORKSHOP FOR ME CANDIDATES

Threeline infotech conducted one day networking for ME candidates session handled by Mr.Muthukumar.

STAFF PARTICIPATION:

- Dr.N.Balaji, HOD of IT Department has attended the National Summit on Quality in Education organized by CII institute of quality at Christ University, Bangalore on 16/09/14 & 17/09/14.

- Mrs.M.Jothi, Associate Professor of IT Department has attended one day national seminar in "High Impact Journal writing and publishing" organized by Department Of EEE, Anna University, Tirunelveli on 25.09.2014 and two days national workshop on "Swarm Intelligent Techniques" conducted by Anna University, Coimbatore region organized by department of computer applications on 19.09.2014 & 20.09.2014

DEPARTMENT ACHEIVEMENTS:

Dr.P.Ganesh Kumar and Dr.N.Balaji,HOD of IT Department received rupees 1,76,242 from Research and Development Unit (RDU) of KLNCE towards project titled "Automatic irrigation for Precision Agriculture" in association with Agricultural College, Madurai during the year 2014-2015.

Suggestions and Feedback Contact:
Klnce_itsig@live.com